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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB centrol number.

Sub	Substitute for form 1449A/B/PTO			Complete if Known		
			`	Application Number	10/731,892-Conf. #4677	
- IN	IFORMATIO	ON DIS	SCLOSURE	Filing Date	December 9, 2003	
S	TATEMENT	T BY A	PPLICANT	First Named Inventor	W. D. Sheffield	
				Art Unit ,	3762	
	(Use as many sheets as necessary)			Examiner Name	Not Yet Assigned	
Sheet	1	of	6	Attorney Docket Number	337348055US1	

Examiner	Cite	Document Number	Publication Date	Name of Patente		Pages, Columns, Lines, Who	
nitials*	No.	Number-Kind Code ² (if known)	MM-DD-YYYY	Applicant of Cited Document		Relevant Passages or Relevar Figures Appear	
		US-09/978,134		Gliner			
		US-2002-0087201	07-04-2002-	Andrew Firlik			
		US-2002-0091419		Firlik			
		US-2002-0099412		David Fischell -			
		U3-2002-0109485		Benjamin Pless			
0		US-2002/0028072	03-07-2002	Kashiyama			
XX		US-2002/0087201	07-04-2002	Firlik			
100		US-2002/0091419-A1	07-11-2002				
00		US-2002/0099412	07-25-2002	Fischell et al.		T	
		US-2002/0169485	11-14-2002	Pless et al.			
02		US-2003-0149457-A1	08-07-2003	Tcheng et al.			
00		US-2003-0187490	10-02-2003	Bradford Gliner			
		US 2003/0149457-A1	08-07-2003	Tcheng et al.			
		US-2003/0187490-A1		B. Gilner		ļ	
ره		US-2004-0158298		Bradford Gliner		†	
		US-3,650,276		Burghele et al.			
		US-4,140,133		Kastrubin et al.	• • • • • • • • • • • • • • • • • • • •		
		US-4,431,000		Butler et al.	· · · · · · · · · · · · · · · · · · ·		
		US-4,542,752		DeHaan et al.			
1		US-4,607,639		Tanagho et al.			
_	-	US-4,646,744	03-03-1987	Capel			
		US-4,844,075	07-04-1989				
		US-4,865,048		Eckerson .			
		US-5,002,053	03-26-1991	Garcia-Rill et al.			
		US-5,031,618	07-16-1991	Mullett	····		
		US-5,054,906		WILLIAM G. LYONS		·	
1		US-5,092,835		Schurig et al.			
		US-5,143,089		Alt			
1		US-5,169,384		Bosniak et al.			
		US-5,215,086		Terry Jr. et al.		-	
		US-5,224,491	07-06-1993			 	
				Deslauriers et al.		 	
		US-5,255,678 US-5,263,967		WILLIAM G. LYONS		 	
		US-5,304,206		Baker, Jr. et al.		 	
					 -	 	
		US-5,358,513		Powell, III et al.	 	 	
		US-5,370,672	12-06-1994			 	
		US-5,411,540	05-02-1995				
		US-5,417,719	05-23-1995				
		US-5,423,864	06-13-1995			1	
		US-5,537,512	07-16-1996				
		US-5,540,736		Haimovish et al.			
		US-5,549,655		Erickson .		ļ	
		US-5,575,813	01-01-2001	DAVID J. EDELL		ļ	
\bot		US-5,591,216	01-07-1997	Testerman et al.			
_		US-5,593,432		Crowther et al.			
V		US-5,628,317	05-13-1997	Starkebaum et al.			

PTO/SB/08a/b (08-03)

Approved for use through 07/31/2008. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Subs	Substitute for form 1449A/B/PTO			Complete if Known		
000				Application Number	10/731,892-Conf. #4677	
IN	FORMATIC	N DIS	SCLOSURE	Filing Date	December 9, 2003	
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_				Art Unit	3762	
	(Use as many	sheets as	necessary)	Examiner Name	Not Yet Assigned	
Sheet	2	of	6	Attorney Docket Number	337348055US1	

60	US-5,683,422	11-04-1997	Rise	
42	US-5,702,429	12-30-1997		
	US-5,711,316		Elsberry et al.	
	US-5,713,922	02-03-1998		
	US-5,713,923	02-03-1998		
 	US-5,716,377	02-10-1998		
1 -	US-5,722,401		Pietroski et al.	
	US-5,735,814		Elsberry et al.	
- - 	US-5.752.979	05-19-1998		
+	US-5,782,798	07-21-1998		
	US-5,792,186	08-11-1998		
	US-5,797,970	08-25-1998		
	US-5,814,014		Elsberry et al.	
	US-5,814,092	09-29-1998		
	US-5,824,021	10-20-1998		
	US-5,832,932		Elsberry et al.	
	US-5,832,932 US-5,833,709	11-10-1998	Dice at al	
	US-5,843,148		JOHANNES T. M. GIJSBERS	
	US-5,843,148		Gijsbers et al.	
	US-5,843,150		Dreessen et al.	
	US-5,885,976	03-23-1999		
	US-5,886,769	03-23-1999		
	US-5,893,883			<u> </u>
	US-5,994,916	05-18-1999	Torgerson et al.	
	US-5,913,882	06-22-1999		
	US-5,925,070	07-20-1999		
	US-5,938,688	08-17-1999		
	US-5,938,689		Fischell et al.	
	US-5,941,906		Barreras, St. et al.	
	US-5,964,794	10-12-1999		
	US-5,975,085	11-02-1999		·
-+	US-5,978,702	11-02-1999		
	US-5,983,140	11-09-1999		
	US-6,006,124		Fischell et al.	
	US-6,011,996		Gielen et al.	
	US-6,016,449 US-6,018,682	01-16-2000	Fischell et al.	
	US-6,021,352		Christopherson et al.	
	US-6,021,352			
	- ' - '	02-15-2000	Elsberry et al.	
	US-6,042,579 US-6,052,624	04-18-2000		
	US-6,055,456	04-25-2000		
	US-6,057,847	05-02-2000		
	US-6,058,331	05-02-2000		
	US-6,060,048	05-09-2000		
	US-6,061,593		Fischell et al.	
	US-6,066,163	05-23-2000		
	US-6,104,956		Naritoku et al.	
W	US-6,104,960	100-10-2000	Duysens et al.	

Examiner Signature Jellica J Revolution Date Considered PTO/SB/08a/b (08-03)
Approved for use through 07/31/2008. OMB 0851-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute	e for form 1449A/I	вурто		Complete if Known		
0000				Application Number	10/731,892-Conf. #4677	
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STA	TEMEN	T BY	APPLICANT	First Named Inventor	W. D. Sheffield	
				Art Unit	3762	
	(Use as man)	/ sheets as	necessary)	Examiner Name	Not Yet Assigned	
Sheet	3	of	6	Attorney Docket Number	337348055US1	

<i>@</i>	US-6,122,548	09-19-2000	Starkebaum et al.	
4	US-6,126,657	10-03-2000	Edwards et al.	
	US-6,128,537	10-03-2000		
	US-6,128,538	10-03-2000	Fischell et al.	
	US-6,134,474	10-17-2000	Fischell et al.	
	US-6,152,143	11-28-2000	Edwards	
	US-6,161,044	12-12-2000	Silverstone	
	US-6,161,045	12-12-2000	Fischell et al.	
	US-6,353,754	03-05-2002	Fischell et al.	
	US-6,354,299	03-12-2002	Fischell et al.	
	US-6,360,122	03-19-2002	Fischell et al.	
	US-6,366,813	01-01-2001	DANIEL JOHN DILORENZO	
	US-6,427,086	07-30-2002	Fischell et al.	
	US-6,459,936	12-27-2001	Fischell et al.	
	US-6,463,328	10-08-2002	MICHAEL SASHA JOHN	
	US-6,466,822	10-15-2002		
	US-6,473,568	03-07-2002	Ritsuo Kashiyama	
	US-6,473,639	10-29-2002	Fischell et al.	
	US-6,480,743	11-12-2002	Kirkpatrick et al.	
	US-6,622,048	01-01-2001	Carla Mann	
	US-6,687,525	05-09-2002	Rodolfo Llinas	
	US-6,690,974	06-20-2002	Stephen Archer	
	US-60/325,872		Sheffield	
	US-60/325,978		Gliner	<u></u>

		FOREI	GN PATENT	DOCUMENTS		
Examiner Initials*	Cite No.1	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
(a)		WO 02/09811	02-07-2002	Neuropace, Inc.		T
(20)		WO 01/97906	12-27-2001	Advanced Bionics Corp		
10		WO 02/38031	05-16-2002	Neuropace, Inc.		
100		WO 87/07511	12-17-1987	Zion Educational Foundation		T
80		WO 03/043690	05-30-2003	Vertis Neuroscience, Inc.		\vdash
60.		WO 94/07564	04-14-1994	Cardiac Pacemakers, Inc.		\vdash
(0)		WO 02/38217	05-16-2002	Neuropace, Inc.		\vdash
6		WO 95/21591	08-17-1995	University of Iowa Research Foundation		
(00		WO 02/36003	05-10-2002	Neuropace, Inc.		
60		WO 03/082402	03-20-2003	Vertis Neuroscience, Inc.		
60)		EP 1145736	10-17-2001	Neurospace, Inc.		
(a)		EP-0 998 958-A2	10-05-2000	Medtrionic Inc.		
(0)		WO 98/06342	02-19-1998	Neotonus, Inc.		T

Examiner Subject Rudil	Date Considered 04/14/06	

PTO/SB/08a/b (08-03)
Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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				Application Number .	10/731,892-Conf. #4677	
11	NFORMATIO	N DIS	SCLOSURE	Filing Date	December 9, 2003	
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	(Use as many sheets as necessary)			Examiner Name	Not Yet Assigned	
Sheet	4	of	6	Attorney Docket Number	337348055US1	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. *Applicant's unique citation designation number (optional). *See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 801.04. *Enter Office that issued the document by the two-letter code (WIPO Standard ST.3). *For Japanese patent documents, the indication of the year of the right of the Emperor must precede the senial number of the patent document by the appropriate symbols as indicated on the document under WIPO Standard ST.18 if possible. *Applicant is to place a check mark here if English language Translation is attached.

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
(P)		BEL, S. and BAUER, B.L., "Dorsal Column Stimulation (DCS): Cost to Benefit Analysis," Acta Neurochirurgica, Suppl. 52, pp. 121-123 (1991)	
ão l		BENABID, A.L. et al, "Chronic electrical stimulation of the ventralis intermedius nucleus of the thalamus as a treatment of movement disorders," J. Neurosurg., April 1997, 86(4); 737; http://www.ncbi.nlm.nih.gov, [accessed 11/18/2003]	
(A)		BUTEFISCH et al., "Mechanisms of use-dependent plasticity in the human motor cortex," Proc. Natl. Acad. Sci. USA, Vol. 97, No. 7, pp. 3661-3665 (March 2000)	
@		CANAVERO, S. and PAOLOTTI, R., "Extradural Motor Cortex Stimulation afor Advanced Parkinson's Disease: Case Report," Movement Disorders, 15(1):169-171,2000	
P		CINCOTTA et al., "Reorganization of the motor cortex in a patient with congenital hemiparesis and mirror movements," Neurology, Vol. 55, pp. 129-131 (2000)	
(P)		CLASSEN, et al., "Rapid Plasticity of Human Cortical Movement Representation Induced by Practice," The Journal of Neurophysiology, Vol. 79, No. 2, pp. 1117-1123 (February 1998)	
(P)		COHEN et al., "Studies of Neuroplasticity With Transcranial Magnetic Stimulation," The Journal of Clinical Neurophysiology, Vol. 15, No. 4 (1998)	
(ab)		CRAMER, S.C. and BASTINGS, E.P., "Mapping clinically relevant plasticity after stroke," Neuropharmacology Vol. 19, No. 5, pp. 842-851 (April 2000)	
œ		DAM et al., "Effects of Fluoxetine and Maprotiline on Functional Recovery in Poststroke Hemiplegic Patients Undergoing Rehabilitation Therapy," Stroke, Vol. 27, No. 7, pp. 1211-1214 (July 1996)	
60		FEYS et al., "Value of somatosensory and motor evoked potentials in predicting arm recovery after a stroke," (October 1999)	
60		FRANZINI et al., "Reversal of thalamic hand syndrome by long-term motor cortex stimulation," Journal of Neurosurgery 93:873-875 (2000)	
(0)		GLADSTONE et al., "Enhancing Recovery after Stroke with Noradrenergic Pharmacotherapy: A New Frontier?," Can J. Neurol. Sci., Vol. 27, No. 2 (May 2000)	
(a)		GORDON et al., "Parameters for direct cortical electrical stimulation in the human: histopathologic confirmation," Electroencephalography and clinical Neurophysiology, Vol. 75, pp. 371-377 (1990)	
(2)		HODGE, JR., C.J. and BOAKYE, M., "Biological Plasticity: The Future of Science in Neurosurgery," Neurosurgery, Vol. 48, No. 1 (January 2001)	
80		KAUHANEN et al., "Domans and Determinants of Quality of Life After Stroke Caused by Brian Infarction," Arch. Phys. Med. Rèhabil., Vol. 81, pp. 1541-1546 (December 2000)	
(Ma)		KOPELL et al., "The Continuing Evolution of Psychiatric Neurosurgery," CNS Spectrums, Vol. 5, No. 10, pp. 20-31 (October 2000)	
		LEVY et al., "Functional MRI Evidence of Cortical Reorganization in Upper-Limb Stroke Hemiplegia Treated with Constraint-Induced Movement Therapy," American Journal of Physical Medicine & Rehabilitation, Vol. 80, No. 1, pp. 4-7 (2001)	
D		LIÉPERT et al., "Treatment-Induced Cortical Reorganization After Stroke in Humans," Stroke, 31:1210-1216 (2000)	
Examiner Signature	1	Succelebrated Date Considered 04/14/04	0

PTO/SB/08a/b (08-03)

Approved for use through 07/31/2008. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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IN	IFORMATIC	ON DIS	SCLOSURE	Filing Date	December 9, 2003	
S	TATEMENT	BY A	PPLICANT	First Named Inventor	W. D. Sheffield	
-				Art Unit	3762	
İ	(Use as many	sheets as	necessary)	Examiner Name	Not Yet Assigned	
Sheet	· 5	of	6	Attorney Docket Number	337348055US1	

		MALENKA, R.C. and NICOLL, R.A., "Long-Term Potenetiation - A Decade of Progress?,"
$1/\alpha$	A I	Neuroscience, Vol. 285, No. 5435, Issue of 17 September 1999, pp. 1870-1874
(U	7	MARTINEZ et al., "Motor hand recovery after stroke Prognostic yield of early transcranial
1	1	magnetic stimulation," Electromyography. Clin. Neurophysiology, Vol. 39, pp. 405-410 (1999)
-		NETZ et al., "Reorganization of motor output in the non-affected hemisphere after stroke,"
	1 .	Brain, 120, pp. 1579-1586 (1997)
		NITSCHE, M.A. and PAULUS, W., "Excitability changes induced in the human motor cortex by
1	i	weak transcranial direct current stimulation," The Journal of Physiology, Vol. 527.3, pp. 663-
		639 (2000)
		OLIVERI et al., "Paired transcranial magnetic stimulation protocols reveal a pattern of
	1	inhibition and facilitation in the human parietal cortex," The Journal of Physiology, 529.2, pp.
		461-468 (2000)
ŀ		PASCUAL-LEONE et al., "Study and Modulation of Human Cortical Excitability With
<u> </u>		Transcranial Magnetic Stimulation," Journal of Clinical Neurophysiology, Vol. 15, No. 4 (1998)
1]	PASCUAL-LEONE et al., "Transcranial magnetic stimulation and neuroplasticity,"
<u> </u>		Neurophycologia 37, pp. 207-217 (1999)
		REZAI, "Neurostimulation," Neurological Research, Vol. 22, No. 3 pp. 235-273 (April 2000)
		ROSSI et al., "Effects of Repetitive Transcranial Magnetic Stimulation on Movement-related
\vdash		Cortical Activity in Humans," Cerebral Cortex, Vol. 10, No. 8, pp. 802-808 (August 2000) ROUX et al., "Chronic Motor Cortex Stimulation for Phantom Limb Pain: A Functional Magnetic
1 1		Resonance Imagining Study: Technical Cast Report," Neurosurgery, Vol. 49, No. 3 (March
1 1		2001)
-		SAITOU et al., "Cerebral Blood Volume and Oxygenation Among Poststroke Hemiplegic
1 1		Patients: Effects of 13 Rehabilitation Tasks Measured by Near-Infrared Spectroscopy," Arch.
		Phys. Med. Rehabil., Vol. 81 pp. 1348-1356 (October 2000)
		SANDKUHLER, "Learning and memory in pain pathways," Pain 88, pp. 113-118 (2000)
		SANES, "The Relation between Human Brain Activity and Hand Movements," NeuroImage 11,
1 .		pp. 370-374 (2000)
		SANES, J.N. and DONOGHUE, J.P., "Plasticity and Primary Motor Cortex," Annu. Rev.
		Neurosci. 23:393-415 (2000)
1 1		SCHIFF et al., "A neuromodulation strategy for rational therapy of complex brain injury states,"
Ш		Neurological Research, Vol. 22 pp. 267-272 (April 2000)
1 1		SHIMIZU et al., "Therapeutic efficacy of transcranial magnetic stimulation for hereditary
1 1		spinocerebellar degeneration," Tohoku Journal of Experimental Medicine, 189(3):203-11
H		(November 1999)
		SIEBNER et al., "Lasting cortical activation after repetitive TMS of the motor cortex," NEUROLOGY 54, pp. 956-963 (February 2000)
H		STEFAN et al., "Introduction of plasticity in the human motor cortex by paired associative
		stimulation," Brian, Vol. 123, No. 3, pp. 575-584 (March 2000)
		TURTON et al., "Contralateral and ipsilateral EMG responses to transcranial magnetic
	-	stimulation during recovery of arm and hand function after stroke," Electroencephalography
		and Clinical Neurophysiology 101 pp. 316-328 (1996)
		TURTON, A. and LEMON, R.N., "The contribution of fast corticospinal input to the voluntary
1		activation of proximal muscles in normal subjects and in stroke patients," Exp. Brain Res., Vol.
<u> </u>		129, pp. 559-572 (1999)
	1	VAN DER LEE et al., "The Intra- and Interrater Reliability of the Action Research Arm Test A
1		Practical Test of Upper Extremity Function in Patients With Stroke," Arch. Phys. Med. Rehabil.,
<u> </u>		Vol. 82 pp. 14-19 (January 2001)
1 .	[,]	WALKER-BATSON et al., "Amphetamine Paired With Physical Therapy Accelerates Motor
7	⊬	Recovery After Stroke, "Stroke, Vol. 26, No. 12, pp. 2254-2259 (1995) ZIEMANN et al., "Modulation of Plasticity in Human Motor Cortex after Forearm Ischemic
	<u> </u>	ZEEMPHAN Et al., MODULATION OF Plasticity in Human Motor Cortex after Poteatin Ischemic

Date Considered Examiner Signature Kleide

PTO/SB/08a/b (08-03)
Approved for use through 07/31/2008. OMB 0851-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE spond to a collection of information unless it contains a valid OMB control number.

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Cabana				Application Number	10/731,892-Conf. #4677
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				Art Unit	3762
(Use as many sheets as necessary)			necessary)	Examiner Name	Not Yet Assigned
heet	6	of:	6	Attorney Docket Number	337348055US1

GP)	Nerve Block," The Journal of Neuroscience 18(3):1115-1123 (February 1998)	
60	ZIEMANN et al., "Modulation of Plasticity in Human Motor Cortex after Forearm Ischemic	
(40)	Nerve Block," The Journal of Neuroscience, Vol. 18, No. 3, pp. 1115-1123 (February 1998)	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Date Considered Examiner Signature

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached.